

ABSTRACT OF THE DISCLOSURE

An optical multilayer film includes: a first layer; a second layer that contains titanium oxynitride as a main component; and a third layer that contains magnesium fluoride as a main component; the first layer that has a different refractive index from that of the second layer or the third layer; and the first layer, the second layer, and the third layer being part of a laminated structure that includes a plurality of reflection planes. The thickness of the third layer is smaller than $1/4$ wavelength.